REMARKS

Applicant respectfully requests that the amendments to the claims be made prior to examination of the present RCE application. Claims 1, 3 and 5-19 remain pending in this application. In the amendments, independent claims 1 and 14 have both been amended to further clarify the claimed invention thereof over the cited prior art references. Applicant respectfully requests reconsideration of the rejected claims in view of the foregoing amendments and the reasons which follow.

1.   Examiner Telephone Interview

On January 6, 2004, Applicant's attorney conducted a telephonic interview with the Examiner and Supervisory Patent Examiner M. Hoff to discuss the substance of the final Office Action. During the interview, U.S. Patent No 4,990,893 to Kiluk and Carey et al. "Resistance and Test-Based Outlier Rejection: Effects on Gaussian One-and Two-Sampled Inference" were discussed in relation to the foregoing amendments to independent claims 1 and 14. Applicants wish to thank the Examiners for taking the time to conduct the interview.

2.   Rejection of Claims 1, 3 and 5-8 Under 35 U.S.C. § 103(a) Based on Kiluk in view of Carey

In the final Office Action, claims 1, 3 and 5-8 were rejected under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent No 4,990,893 to Kiluk in view of Carey et al., "Resistance and Test-Based Outlier Rejection: Effects on Gaussian One-and Two-Sampled Inference." As explained below, the cited combination of references fails to disclose or suggest the claimed invention, particularly as amended above.

In the amendments, independent claim 1 has been amended to recite that a statistical procedure (e.g., GESD) is used to identify a "set of outliers" and a "set of non-outliers" in the plurality of utility measurements, and that the performance of the system is evaluated in

- 7 -

response to the set of outliers and set of non-outliers by calculating "how far each outlier is from a robust estimate value for utility usage determined from the set of non-outliers."

Neither Kiluk nor Carey (taken alone or in combination) disclose or suggest a method that includes all of the foregoing steps, and particularly not as recited in combination with the remaining steps of method claim 1. As to Kiluk, it discloses an alarm/warning system and associated method that is used for monitoring of service apartments for elderly and/or handicapped persons. The method involves creating a standard profile or curve of "normal" energy consumption data recorded over a period of time (e.g., the most recent two weeks of data). The values in the standard curve are then compared against actual energy consumption values that are subsequently measured and an alarm is triggered if a pre-programmed threshold limit value is exceeded.

In the Office Action, the Examiner found that the measured consumption values in Kiluk that exceed the threshold limit value are "outliers." Applicant disagrees with this finding. The present application defines "outliers" as values that are "statistically significantly different than most of the data samples." (See page 8, paragraph 22). Thus, "outliers" are values which are determined using a "statistical procedure" (see claim 1 as originally filed) to be significantly different than most of the data sample values. By contrast, in Kiluk there is no disclosure or suggestion as to how the threshold limit used to detect the so-called "outliers" is determined. More importantly, there is no disclosure or suggestion in Kiluk to set the pre-programmed threshold limit using a statistical procedure as would be required to identify "outliers" within the meaning of claim 1. Instead, the pre-determined threshold limit in Kiluk appears to be manually set. As explained in the present application, systems and methods that require manual setting of alarm thresholds (as is common in the prior art) can be problematic:

> Alarm and warning systems and data visualization programs
> often are provided to assist in deriving meaningful information
> from the gathered data. However, human operators must
> select the thresholds for alarms and warnings, which is a

daunting task. If the thresholds are too tight, then numerous
false alarms are issued, and if the thresholds are too loose,
equipment or system failures can go undetected.

(See paragraph [0007], page 3). Unlike the system in Kiluk, the invention of claim 1 does not require any human involvement or determination to set threshold limits for determining outliers. Instead, the invention of claim 1 uses a "statistical procedure" to identify the outliers that is entirely automated (i.e., no human involvement is needed to set bounds for detecting the outliers). Because the claimed invention uses an entirely automated statistical procedure for identifying the outliers, there is no concern with an inexperienced operator setting alarm/warning thresholds that are too high or too low.

Even assuming for argument that the measured values in Kiluk that exceed the pre-programmed threshold values are "outliers" (which Applicant disputes), Kiluk in view of Carey still fails to disclose or suggest the invention of independent claim 1 for the reasons that follow.

As to Kiluk, it does not disclose or suggest creating a "set of outliers" and a "set of non-outliers" (i.e., the data that remains after all outliers are removed) as now recited by independent claim 1. Moreover, Kiluk also does not disclose evaluating performance of the system by comparing each outlier in the set of outliers to a "robust estimate value" for utility usage determined from the set of non-outliers. As explained in the prior Amendment and agreed to by the Examiner in the Final Office Action, a "robust estimate" is a value that is determined using only non-outlier data (i.e., the set of data which remains after all of the outliers have been detected and removed). In Kiluk, there is no disclosure or suggestion to compare actual energy consumption values against robust estimate values for assessing performance of the system. Instead, the actual energy consumption values measured in Kiluk are compared to a standard reference curve of values that are calculated from all energy consumption values (i.e., including what the Office Action terms "outliers") measured during a prior time period (e.g., the prior two weeks).

Carey fails to make up for the above-noted deficiencies in Kiluk. More particularly, Carey does not disclose or suggest creating sets of outliers and non-outliers, and evaluating performance of the system by comparing each outlier in the set of outliers to a "robust estimate value" for utility usage determined from the set of non-outliers. As to Carey, the Office Action stated:

> The Examiner does maintain, however, that the invention of Carey teaches this method by determining the most extreme deviate, removing the most extreme deviate, and recalculating to determine a new most extreme deviate using the smaller set of samples. Carey then teaches repeating this process until all of the extreme deviates are removed, each time using mean and standard deviation estimates based on sample sets with the extreme deviates remove[d] (i.e., robust mean and standard deviation values).

(Office Action, page 8). Assuming it is true (which Applicant disputes) that Carey does inherently or necessarily disclose calculating robust mean and standard deviation values during the iterative process of performing the GESD statistical procedure, this still is not a disclosure or suggestion to perform the step of calculating how far "each outlier" is from a "robust estimate" value, as required by claim 1. This distinction is best understood from the flowchart in Figure 4 of the present application. In the embodiment illustrated in Figure 4, the iterative GESD method disclosed in Carey corresponds generally to logic blocks 42-58 of the logic flow diagram. By contrast, the step of assessing performance of the system by calculating how far each outlier is from a robust estimate value of utility usage (as recited by claim 1) is performed in connection with steps 62-66 in the logic flow diagram. There is simply no equivalent disclosure, suggestion or teaching in either Carey or Kiluk to use the outliers and non-outliers in this manner to assess performance of the system.

In view of the foregoing differences between Kiluk in view of Carey and independent claim 1, it is respectfully submitted that the rejection of claim 1 is overcome by entry of the foregoing amendments. Additionally, claims 3 and 5-8 variously depend from claim 1 and are thus patentable over the applied combination of references for at least the same reasons.

- 10 -

Accordingly, Applicant respectfully requests that the rejection of claims 1, 3 and 5-8 under 35 U.S.C. § 103(a) as being unpatentable over Kiluk in view of Carey be withdrawn.

3. Rejection of Claims 9-18 Under 35 U.S.C. § 103(a) Based on Kiluk in View of Carey and Further in View of Sematech

In the Office Action, claims 9-18 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Kiluk and Carey (as applied to claims 1-8 above) and further in view of Sematech, "The Engineers Statistical Internet (ESI) Handbook: Grubbs' Test for Outliers."

The inventions of claims 9-13 are patentable over the cited combination for at least the reason that these claims all depend from claim 1. As noted above, the combination of Kiluk in view of Carey fails to disclose or suggest the invention of claim 1, particularly as now amended. It follows that claims 9-13 are also patentable over Kiluk in view of Carey and further in view of Sematech because the latter fails to make up the above-noted deficiencies in Kiluk in view of Carey.

The remaining claims include independent claim 14 and dependent claims 15-18. Claim 14 has been amended similarly to claim 1 and is patentable over Kiluk in view of Carey and further in view of Sematech for at least the same reasons as provided above. Hence, claim 14 and dependent claims 15-18 are all patentable over the cited combination of references for at least the same reasons as provided above.

Accordingly, Applicant respectfully requests that the rejection of claims 9-18 under 35 U.S.C. § 103(a) as being unpatentable over Kiluk in view of Carey and further in view of Sematech be withdrawn.

4. Rejection of Claim 19 Under 35 U.S.C. § 103(a) Based on Kiluk in View of Carey and Sematech and Further in View of Jensen

In the Office Action, claim 19 was rejected under 35 U.S.C. § 103(a) as being unpatentable over Kiluk in view of Carey and Sematech and further in view of U.S. Patent No. 5,555,195, to Jensen et al.

- 11 -

The invention of claim 19 is patentable over the cited combination for at least the reason that it depends from claim 14. As noted above, the combination of Kiluk in view of Carey and Sematech fails to disclose or suggest the invention of claim 14 as amended, and Jensen fails to make up for the deficiencies. Hence, it follows that claim 19 is patentable over Kiluk in view of Carey and Sematech and further in view of Jensen.

Accordingly, Applicant respectfully requests that the rejection of claim 19 under 35 U.S.C. § 103(a) as being unpatentable over Kiluk in view of Carey and Sematech and further in view of Jensen be withdrawn.

5.   Conclusion

Claims 1, 3 and 5-19 are pending in the present application. Applicants believe that the present application is now in condition for allowance. Favorable reconsideration of the application, as amended, is respectfully requested.

The Examiner is invited to contact the undersigned by telephone if it is felt that a telephone interview would advance the prosecution of the present application.

Respectfully submitted,

Date ___January 6, 2004___   By _____

FOLEY & LARDNER   David J. Bates
Customer Number: 26371   Attorney for Applicant
Telephone: (414) 297-5760   Registration No. 39,902
Facsimile: (414) 297-4900

- 12 -